

# **The Types and Original Specimens of Published Names of Mosses Preserved in the Herbarium of Singapore Botanic Gardens (SING)**

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## **Abstract**

A total of 51 types and original specimens of published names of mosses, mostly collected from West Malesia, are preserved at the herbarium of Singapore Botanic Gardens (SING). Information about the locality, collector and collector's number, date of collection, nomenclatural status, and the currently accepted name, for each of the types and original specimens are presented.

## **Introduction**

The well known herbarium of Singapore Botanic Gardens (SING) has a small, less known and little used collections of bryophytes. The specimens were collected mainly from Peninsular Malaya, Singapore, Sabah formerly British North Borneo and Sarawak. The entire bryophyte collections consist of about 10,000 packets, of which 51 are types and original material of published names of moss taxa. In addition, there are 13 moss specimens with unpublished herbarium names and marked as new species by the eminent English muscologist, Mr. H. N. Dixon, who also identified many of the moss collections at SING. Furthermore, a nearly equal number of specimens were indicated to be types of various hepatic taxa. The information on the hepatic types at SING will be dealt with in a separate report.

In preparing the list of moss types kept at SING, I have endeavored to confirm the nomenclatural status of all the specimens marked as types. Because many of the new species were described by Dixon, the holotypes are, presumably, with The Natural History Museum in London (BM) where the herbarium of Dixon was relocated after his death in 1944. The duplicate specimens at SING, even though represented by a larger quantity in several instances, can only be the isotypes or isoparatypes. It is interesting to note

that some type packets at SING include handwritten field data not published in the species' protologue.

I also include in the present listing original materials of a handful of *nomina nuda* inadvertently published by Dixon based on the moss collections at SING. Often, this original material is needed to elucidate the intent of the author or to resolve the taxonomic enigma of a "nomen nudum". Some have subsequently been shown to represent distinct species.

Lastly, to help users of the type collections at SING, I have indicated the currently accepted name as a note under the binomial of the moss taxon concerned.

### Catalogue of Species

*Acroporium macroturgidum* Dix.

[Isotype] Malaysia, Pahang, G. Tahan, 28 Aug 1928, *RE Holttum* 20920.

*Acroporium surculare* Dix.

[Isolectotype] Malaysia, Perak, Bidor Road, Tapah, Nov 1908, *HN Ridley* 153.

*Note:* Recombined as *Isocladiella surcularis* (Dix.) B.C. Tan and H. Mohamed, the name of this species was lectotypified by Tan and Mohamed (1990).

*Breutelia kinabaluensis* Dix.

[Isotype] Malaysia, Sabah, Mt. Kinabalu, 9000 ft, 16 Nov 1931, *RE Holttum* 25337.

*Calymperes carrii* Dix.

[Isotype] Papua New Guinea, Kanosia, Feb 1935, *CE Carr* 11473.

*Note:* This taxon was treated as a synonym of *Calymperes crassinerve* (Mitt.) Jaeg. in Reese *et al.* (1986). The isotype was distributed as a number of *Musci Selecti et Critici*, Ser. III, 1936.

*Chionoloma latifolium* Dix.

[Isotype] Malaysia, Langkawi, Pulau Dayang Bunting, 23 Aug 1925, *RE Holttum* 15130.

*Cladopodanthus microcarpus* Dix.

[Isotype] Malaysia, Sarawak, Mt. Dulit, Ulu Koyan, 22-25 Sep 1932, *PW Richards* M2034.

*Clastobryella asperrima* Dix.

[Isotype] Malaysia, Sabah, Mt. Kinabalu, Pakka, 15 Nov 1931, *RE Holttum* 25646.

*Dicranoloma angustifrondeum* Dix.

[Isotype] Malaysia, Sabah, Tenompok, 4000 ft, 17 Jun 1925, *CM Enriquez* 18111.

*Note:* A synonym of *Dicranoloma braunii* (Dozy & Molk.) Par. (Tan 1989).

*Dicranoloma brevicapsularis* Dix.

[Isotype] Malaysia, Pahang, G. Tahan, 12 Jun 1922, *Mohd. Haniff Nur* 7915a.

*Note:* A synonym of *Dicranoloma billarderi* (Brid. Ex Anon.) Par. (Tan 1989).

*Dicranoloma euryloma* Dix.

[Isotype] Malaysia, Sabah, Mt. Kinabalu, Tenompok, Lumu-Lumu, 12 Nov 1931, *RE Holttum* 25633.

[Isoparatype] Malaysia, Sarawak, Mt. Dulit, Ulu Koyan, 15 Sep 1932, *PW Richards* M1853.

*Note:* A synonym of *Dicranoloma assimile* (Hampe) Ren. (Tan 1989).

*Diphyscium rhynchophorum* Dix.

[Isotype] Malaysia, Sarawak, Mt. Dulit, Ulu Koyan, 15 Sep 1932, *PW Richards* M1868.

*Note:* The specimen bears the annotation of M. Manuel in 1978 as an isotype. According to Hyvönen (1989a), this species is a synonym of *Diphyscium lorae* C. Muell.

*Distichophyllum sinuosulum* Dix.

[Isotype] Malaysia, Perak, Birch's Hill, 3 Mar 1924, *IH Burkill* 12606.

*Note:* A synonym of *Distichophyllum cirratum* Ren. & Card. (Mohamed and Robinson 1991).

*Endotrichella formosa* Dix., *nom. nud.*

[Original material] Malaysia, Pahang, Kota Gelanggi, 4 Aug 1929, *MR Henderson* 22405.

*Note:* A synonym of *Garovaglia elegans* (Dozy & Molk.) Bosch & Sande Lac. (Mohamed and Tan 1988).

*Fissidens albolimbatus* Dix.

[Isotype] Malaysia, Sarawak, Long Kapa, Mt. Dulit, Ulu Tinjar, 31 Aug 1932, *PW Richards M1587*.

*Note:* A synonym of *Fissidens ceylonensis* Dozy & Molk. *fide* Tan and Iwatsuki (1989).

*Fissidens pachyphyllus* Dix.

[Isotype] Malaysia, Sarawak, Mt. Dulit, Ulu Koyan, 22 Sep 1932, *PW Richards M2039*.

*Fissidens perpellucidus* Dix.

[Isoparatype] Malaysia, Sarawak, Mt. Dulit, Ulu Tinjar, 29 Aug 1932, *PW Richards M1589*.

*Note:* A synonym of *Fissidens pallidus* Hook. f. & Wils. *fide* Tan and Iwatsuki (1989).

*Forsstroemia rigida* Dix.

[Isotype] Papua New Guinea, above Port Moresby, Boridi, Nov 1935, *CE Carr 13559*.

*Note:* The specimen was distributed as a number of *Musci Selecti et Critici*, Ser. V, 1938. The species was synonymized with *Neolindbergia vitiensis* (Bartr.) Enroth by Akiyama *et al.* (1991) who also reported the Carr specimen at BM as the lectotype. However, only one specimen (*Carr 13559*) was mentioned in the protologue (Dixon 1943), so there is no need for lectotypification.

*Hypnodendron copelandii* Broth. var. *latifolium* Dix.

[Holotype] Malaysia, Sabah, Mt. Kinabalu, Lamu-Lamu, 5000 ft, 18 Jun 1925, *CM Enriquez 18146*.

*Note:* In the protologue, Dixon (1935: 96) indicated the holotype of his new variety to be at SING. The specimen was annotated by A. Touw in December of 1968 as *Hypnodendron diversifolium* Broth. & Geh. (Touw 1971).

*Hypnodendron wrayi* Broth. ex Dix., *nom. nud.*

[Original material] Malaysia, Perak, G. Batu Puteh, 4500 ft, *L Wray Jr. 301*.

*Note:* Specimen annotated by A. Touw in December of 1968 as *Hypnodendron diversifolium* Broth. & Geh. (Touw 1971).

*Leptodontium kinabaluense* Dix.

[Isotype] Malaysia, Sabah, Mt. Kinabalu, 13,400 ft, 14 Nov 1931, *RE Holttum 25685*.

[Isoparatype] Ibid, *RE Holttum* 25688.

*Note:* A synonym of *Leptodontium flexifolium* (Dicks.) Hampe (Zander 1993).

*Leptodontiopsis orientalis* Dix.

[Isotype] Malaysia, Sabah, Mt. Kinabalu, 1,500 ft, 14 Nov 1931, *RE Holttum* 25668.

[Isoparatype] Ibid, *RE Holttum* 25689.

*Mastopoma papillatum* Dix., *nom. nud.*

[Original material] Malaysia, Kelantan, G. Sitong, 2600 ft, 6 Mar 1924, *Mohd. Haniff Nur* 12234.

*Note:* The name was published invalidly by Dixon in 1926.

*Macromitrium ochraceoides* Dix.

[Isotype] Malaysia, Sabah, Mt. Kinabalu, between Kamborangah and Pakka, 7,200-10,200 ft, 13 Nov 1931, *RE Holttum* 25481.

[Isoparatype] Ibid, below Pakka, 10,200 ft, 15 Nov 1931, *RE Holttum* 25663.

*Piloecium acroporioides* Dix.

[Isotype] Malaysia, Sarawak, Marudi (Claudetown), 300 m, Nov 1932, *PW Richards* M2672.

*Pogonatum euryphyllum* Dix.

[Isotype] Malaysia, Sabah, Mt. Kinabalu, near Kamborangah, 7,200 ft, 13 Nov 1931, *RE Holttum* 25644.

[Isoparatype] Ibid, Tenompok, 4,700 ft, 11 Nov 1931, *RE Holttum* 25344.

*Note:* A synonym of *Pogonatum cirratum* (Sw.) Brid. ssp. *macrophyllum* (Dozy & Molk.) Hyvönen (Hyvönen 1989b).

*Pseudoracelopus borneensis* Dix.

[Isotype] Malaysia, Sabah, Bettolan, near Sandakan, 21 Aug 1927, *CB Kloss* 19171.

*Note:* A synonym of *Pogonatum iwatsukii* Touw (Touw 1986).

*Rhaphidostegium complanatum* Dix., *nom. nud.*

[Original material] Malaysia, Perak, Padang Rengas reservoir, 18 Jan 1925, *Mohd. Haniff Nur* 14981.

*Note:* The name was published invalidly by Dixon in 1926.

*Rhaphidostichum aquaticum* Dix.

[Isotype] Malaysia, Sarawak, G. Matang, 500 ft, 22 Jan 1930, *RE Holttum* 23165.

*Note:* The species is now known as *Papillidiopsis aquaticum* (Dix.) Buck and B.C. Tan.

*Sclerohypnum riparium* Dix.

[Isotype] Malaysia, Pahang, Tahan River, 24 Aug 1928, *RE Holttum* 20089.

*Note:* The species is now known as *Sclerohypnum littorale* (Hampe) B.C. Tan (Tan 1991).

*Sphagnum cuspidatulum* C. Muell. var. *trengganuense* A. Johnson

[Holotype] Malaysia, Trengganu, G. Padang, 4,000 ft, Jun 1937, *Moysey and Kiah* 31023.

*Note:* Eddy (1977) listed this trinomial under the synonymy of *Sphagnum cuspidatum* Hoffm. subsp. *subrecurvum* (Warnst.) Eddy.

*Sphagnum flaccidifolium* Dix. ex A. Johnson

[Holotype] Malaysia, Selangor, Telok Forest Reserve, 7<sup>th</sup> Milestone Klang, *Carrick* 500.

[Paratypes] Malaysia, Selangor, Telok Panglima Garang, May 1933, *RE Holttum* 28317; Indonesia, Sumatra, near Palan Borae, 24 Feb 1933, *RE Holttum* 28127.

*Note:* Annotated by A. Eddy in 1968 as *Sphagnum subrecurvum* var. The taxon is subsequently treated by Eddy (1977) as *Sphagnum cuspidatum* Hoffm. ssp. *subrecurvum* (Warnst.) Eddy var. *flaccidifolium* (A. Johnson) Eddy.

*Sphagnum holttumii* Dix. ex A. Johnson

[Holotype] Malaysia, Pahang, G. Tahan, 5,000 ft, 30 Aug 1928, *RE Holttum* 20906.

[Paratypes] Malaysia, Pahang, G. Tahan, ca 5,000 ft, 30 Aug 1928, *RE Holttum* 20908; *ibid*, ca 6,000 ft, 31 Aug 1928, *RE Holttum* 20909; *ibid*, 6,000 ft, 31 Aug 1928, *RE Holttum* 20910; *ibid*, 3500-4500 ft, 28 Aug 1928, *RE Holttum* 20916; Cameron Highlands. 4800 ft, 1 Apr 1930, *RE Holttum* 23300; Johore, G. Pantai, 1600 ft, 9 Jun 1930, *EJH Corner* 23207.

*Note:* All the above mentioned specimens bear the unpublished herbarium name, *Sphagnum kedahense* Dix. The species is treated as a synonym of *Sphagnum perichaetiale* Hampe (Eddy 1977).

*Sphagnum roseotinctum* A. Johnson

[Holotype] Malaysia, Kelantan State, G. Sitong, 2,600 ft, 6 Mar 1924, *Mohd. Haniff Nur* 12244.

*Note:* The specimen was first reported by Dixon in 1926 as *Sphagnum kelantanense*, a *nomen nudum*. Johnson (1958) described it as a new species

and Eddy (1977) reduced it to one of the many synonyms of *Sphagnum perichaetiale* Hampe. In the protologue (Johnson 1958), two paratype specimens of *S. roseotinctum* collected by Spare (no. 1439 and 1430) were mentioned, but I cannot find these two specimens at SING at present.

*Stephanodictyon borneensis* Dix.

[Isotype] Malaysia, Sabah, Mt. Kinabalu, Lobang, 19 Nov 1931, *RE Holttum* 25637.

*Note:* The genus was combined with *Trichostomum* by Zander (1993) and the species is now known as *T. borneensis* (Dix.) Zand.

*Symphyodon complanatus* Dix.

[Isotype] India, Assam, watershed of Egar to Serpo, 5500 ft, 23 Jan 1912, *IH Burkill* 36208 (ex Herb. Hort. Bot. Calcuttensis).

*Syrrhopodon perakensis* Dix.

[Isotype] Malaysia, Perak, Lumut, Dindings, 1896, *HN Ridley* 449.

*Note:* Annotated by H. Mohamed in September of 1983 as *Syrrhopodon fallax* Lac., a synonym of *Syrrhopodon aristifolius* Mitt. As a synonym, this taxon was not mentioned by Mohamed and Reese (1985) in their taxonomic revision of the genus for Malaysia and adjacent regions.

*Taxithelium bilobatum* Dix.

[Isotype] Malaysia, Perak, Bujang, Malacca, 1891, *HN Ridley* 739.

*Note:* The species is now known as *Glossadelphus bilobatus* (Dix.) Broth. The isotype packet at SING has the collection number written as *Holttum* 739, probably an error. In the protologue, the holotype was indicated to be at Mitten Herbarium (Dixon 1924)

*Tayloria borneensis* Dix.

[Isotype] Malaysia, Sabah, Tenompok, 11 Nov 1931, *RE Holttum* 25329.

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